

*the
magazine
of* STANDARDS



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twelfth national conference on standards . . . page 363

SPECIAL ISSUE

DECEMBER 1961

the magazine of STANDARDS

Standardization is dynamic, not static. It means
not to stand still, but to move forward together.

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Opinions expressed by authors in THE MAGAZINE OF STANDARDS are not necessarily those of the American Standards Association.

Published monthly by the American Standards Association, Incorporated, 10 East 40th Street, New York 16, N. Y.

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Subscription rates: Companies in U. S. and possessions, \$7.00 per year; in other countries, \$8.00. Public libraries, schools, and government agencies, in U. S. and possessions, \$6.00 per year; in other countries, \$7.00. Single copy 60 cents. Re-entered as second class matter Jan. 25, 1954, at the Post Office, New York, N. Y., under the Act of March 3, 1879. Indexed in the Engineering Index and the Industrial Arts Index. Microfilm copies can be obtained from University Microfilms, Ann Arbor, Mich.

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ASA

THE COVER: Vice Admiral G. F. Hussey, Jr, USN (Ret), briefs Roger Gay (standing) on details of the administration of the American Standards Association. Admiral Hussey will turn over his responsibilities as ASA's managing director to Mr Gay December 31, 1961.

In appreciation of his services to ASA, Admiral Hussey has been elected an Honorary Member of ASA (page 357)—only the second time in the history of the Association that such an honor has been given.



photo: Jack Eden

ONE OF THE SESSIONS of the National Conference on Standards, reported in this issue, discussed new work on standards for computers. Over the past 10 or 12 years, large-scale computers in use in-

creased in value from practically zero to more than a billion dollars, it was stated. Currently, some 500 or 600 medium and large-scale equipments are installed, and in use.

notes

Readers may have noticed that THE MAGAZINE OF STANDARDS is now using the new name of The American Society for Testing and Materials. The initials of the Society (ASTM) remain the same, but the addition of the "and" in the title is now official. The Society's name was changed with the signing of a court decree on September 18, 1961, amending the charter originally granted the Society in 1902 by the Commonwealth of Pennsylvania.

"The inclusion of the word 'and' in the Society's name places added emphasis on the Society's research work in seeking knowledge of the nature of materials," said ASTM President Miles N. Clair in announcing the change. "It is a further re-emphasis of one of the basic purposes for which ASTM was founded in 1898." The Society was formed "for the promotion of knowledge of the materials of engineering, and the standardization of specifications and the methods of testing." To give greater stimulus to the Society's work in the field of materials research, a Division of Materials Sciences was established two years ago, Mr Clair pointed out.

ASTM now has almost 11,000 members, including individuals, companies, government agencies, and educational institutions. In addition, about 7,000 prominent engineers and scientists serve as representatives of company members on the Society's 87 technical committees.

This Month's Standards Personality



George T. Brown

LONG SERVICE in work on safety standards for the protection of industrial workers is one of the outstanding qualifications of George T. Brown, recently appointed deputy director of the U.S. Bureau of Labor Standards. Mr Brown was appointed by Secretary of Labor Arthur J. Goldberg, early this summer. In his new post, Mr Brown will assist Director Arthur W. Motley in Bureau activities concerned with promoting sound labor standards, including research to advance the well-being of workers.

Although known generally as "Mr," George Brown rates the title "Dr," having received the degree of Doctor of Philosophy in Political Economy from Johns Hopkins University.

Most of Mr Brown's active career has been spent in the service of labor unions or of the government, although for a short time before World War II he taught at Seton Hall College and the Catholic University of America. During the war he was on the staff of the National War Labor Board, was director of research for the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Association, and was executive assistant to the labor members of the Wage Stabilization Board. From 1953-1961 he served as executive secretary of the AFL-CIO's Standing Committee on Occupational Safety and Health.

Mr Brown got started in safety "the hard way," he says. Nearly blinded by an accidental splash of acid while working as a battery cleaner in his youth, he resolved to do everything he could to advance the safety and health of American workers.

In carrying out this resolve, he has been active in many accident-preventing activities. He was a member of ASA's Safety Standards Board from 1958 until his recent appointment, and served on the Board's executive committee. He was a member of the Sectional Committee on Specifications and Methods of Test for Safety Glazing Material, Z26. He has been a member of the Advisory Committee to the Surgeon General on Occupational Health of the U.S. Public Health Service, and a member of the Industrial Board of the National Society for the Prevention of Blindness. He has served as vice-chairman of the National Safety Council's Labor Conference and has been elected chairman for the coming year. Mr Brown has also been a member of the Technical Advisory and Program Planning Committees of the President's Conference on Occupational Safety as well as filling important conference workshop assignments.

While with the AFL-CIO, Mr Brown was chairman of a special committee which assisted the Bureau of Labor Standards in drafting the nation's first safety regulations for protecting longshoremen and ship-repair workers.

Mr Brown is married and has five children. The Browns make their home in Garrett Park, Maryland.



Dr A. V. Astin, director of the National Bureau of Standards; and Vice Admiral G. F. Hussey, Jr, USN (Ret), managing director of the American Standards Association, exemplify in person the cordial relations between Bureau and Association.

ASA's top staff confer during the National Conference on Standards in San Francisco. Left to right: Cyril Ainsworth, deputy managing director; G. F. Hussey, Jr; J. W. McNair, technical director.



H. A. R. Binney, director of the British Standards Institution, points out that Pennsylvania Railroad's "IEC Special" is on time to carry delegates from 21 countries on a special trip to Washington. The delegates were attending the Golden Jubilee meeting of the International Electrotechnical Commission in Philadelphia, September 1954. With Mr Binney are R. C. Sogge, president, U.S. National Committee, IEC; George P. Paine, ASA staff; and Admiral Hussey.

HUSSEY HONORED

Named Honorary Member of ASA

THIS ACTION IS TAKEN in recognition and appreciation of the eminent service he has rendered to the standardization movement during his 14 years as Managing Director and Secretary of the ASA. As administrator of his country's voluntary national standards body and as Vice President of the International Organization for Standardization, he has been a major contributor to standards awareness at the national and international levels. Through his leadership, a greater understanding has been achieved of the vital relationship that standards have to the security, prosperity and health of this nation and of the world.

—Citation from the certificate presented to Admiral Hussey by ASA's Board of Directors, announcing "The Board of Directors of the American Standards Association unanimously elects George F. Hussey, Jr, Honorary Member of the ASA."

FOR THE SECOND TIME in the history of the American Standards Association, an individual has been elected Honorary Member of ASA. This honor has just been awarded Vice Admiral G. F. Hussey, Jr, USN (Ret), by unanimous action of ASA's Board of Directors. Admiral Hussey retires December 31, 1961, after 14 years as managing director of ASA.

The first and only other person to be so honored was George B. Cortelyou, who had been chairman of the ASA Advisory Committee. This was a group of top executives organized by the American Engineering Standards Committee (now the American Standards Association) to advise the Association on important policy questions and to interpret the Association to industry. The only person who has ever held three Cabinet positions, Mr. Cortelyou had served as U.S. Postmaster General, Secretary of the Treasury, and Secretary of Commerce. He was elected honorary member of ASA in appreciation of his long-standing interest in national standardization.

ASA's Board of Directors announced Admiral Hussey's election as Honorary Member and presented a framed certificate to him at the Annual Meeting Luncheon December 14.

The Record — ASA from 1948 to 1962

By JOHN R. TOWNSEND

President, American Standards Association

THE RECEDING SHADOW of World War II lay heavily over the American Standards Association when Vice Admiral G. F. Hussey, Jr, USN (Ret) took office as secretary (later to be named managing director and secretary) in January 1948. The need for co-ordinated national standards, which had brought the organization into existence during World War I, had greatly expanded the activities of ASA in World War II. Speedy development of "American War Standards" to serve the needs of the military services, the War Production Board, the Office of Price Administration, and of industry — for radio components, industrial safety, worker's clothing, and for use of substitute materials — had been paid for under contracts with the Federal Government.

By 1948, three years after the end of the war, the Association was in desperate financial straits — its staff and activities expanded to handle the increased

work on standards sparked by the war needs; its government funds no longer available in time of peace; and its regular income from industry coming in on a prewar basis. Emergency financing with the help of special industry committees had served to tide the Association over temporarily, but it was obvious in January 1948 that this could not—and should not—be relied upon to finance the Association on a long-range basis.

This was the unhappy situation into which Admiral Hussey stepped on January 1, 1948. Faced during the first few months with the necessity of cutting back staff and operations to make it possible to meet outstanding bills and current running expenses with available funds, he has carefully administered the Association's affairs during his 14 years in office. As a result of his administration and the support of ASA's officers and Board members, he now is leaving an



In 1956, Admiral Hussey welcomed H. Thomas Hallowell, Jr. as ASA president. Mr Hallowell succeeded J. L. Cranwell (right).

organization with greatly expanded activities and services, a greatly enlarged budget, and a regular income from industry. The financial problems remain, however, since the needs of the Association continue to expand rapidly — so rapidly that it has been difficult to keep up financial support sufficient to meet the increasing responsibilities.

Admiral Hussey's experience in the Navy had given him an unusually fine background for his work with ASA. He had served as chief of the Navy's Bureau of Ordnance during the war, and as a result had a thorough understanding of the advantages and possibilities of standardization — both for government and industry.

Soon after he took office, it was decided to incorporate the Association under the laws of the State of New York — a direct result of the uncertain financial situation, which made it necessary to protect the individual members of the Board of Directors and other ASA officers. As a by-product of this action, all the Federal Government departments and agencies, which for 30 years had held nonpaying memberships in ASA, withdrew. This action was taken on the advice of government lawyers who believed government agencies could not hold membership in a private corporation. The government people were appreciative of the mission of ASA, however, and have continued to aid the organization in every way short of direct administration participation. Financial support for ASA, therefore, must come from private sources, although contracts for specific objectives can be made with the government, as with private organizations, and ASA has made such contracts from time to time. Throughout his administration, Admiral Hussey, as well as ASA officers and Board members, have worked closely with the government agencies to find ways of strengthening the liaison between government and industry standardization activities.

In 1948, when Admiral Hussey took office, 871

American Standards were listed as available. Early in October, 1961, the work of committee members, sponsor organizations, and standards boards was reflected in the fact that the number of approved American Standards reached 2,000. This does not accurately reflect the amount of work that has been done on standards during these past 14 years, however, since many of the standards listed have been revised at least once and some of them several times during that period.

The Association's activities in general have expanded and developed during the past 14 years, in line with changes taking place in science and industry throughout the world.

Need for coordinated standards for materials and processes affected by the use of nuclear energy and the interest of the groups concerned has resulted in organization of a number of sectional committees and a Nuclear Standards Board to supervise the nuclear standards program.

A growing interest in standards that will help cut down the high costs of shipping products to all parts of the world is reflected in new sectional committees on containers, packaging, and materials handling, and in recent organization of a new Packaging and Handling Standards Board.

More effective cooperation with national organizations that issue standards suitable for approval as American Standards under the Existing Standards Method has resulted in the organization of the Materials and Testing Standards Board. This Board works specifically with the American Society for Testing and Materials in processing ASTM standards as American Standards, and supervising the development of the U. S. viewpoint by ASTM committees assigned to work with committees of the International Organization for Standardization.

Recently, work on data processing, both on a national and on an international level, has been started.

These are only a few of the recent Association activities that reflect new world developments.

PROBABLY ADMIRAL HUSSEY himself would consider his most important contribution to standardization during the past 14 years to be his interest in and activity on behalf of the international standards program. On his first international assignment, he served as a U. S. delegate at the second annual meeting of the ISO Council at Geneva, Switzerland, May 31-June 2, 1948. Howard Coonley, at that time chairman of ASA's executive committee, was president of ISO, and presided at this meeting. Henry St. Leger had taken office as ISO General Secretary the preceding October. As a result, the ISO secretariat program was already well under control. At this meeting, the ISO adopted the policy of identifying standards published by all the national standards bodies that are members of ISO, which Admiral Hussey immediately put into effect for American Standards. The system decided upon was the UDC (Universal Decimal Classification). Each ISO member-body assigns a UDC number to each new published standard and sends to the General Secretary a card giving the title of the standard and a brief description of the standard (in the language of origin, and in at least one of the three official languages—English, French, or Russian). Copies of these cards are provided for each member-body.

At the 1948 Council meeting, his first experience with ISO, Admiral Hussey was appointed to serve on a committee to consider amendments to the ISO Constitution and Rules of Procedure. He became chairman the following year. Since that time, he has helped to draw up the basic rules of the ISO as a member of the Committee on Directives; has helped shape the future of ISO as a member of the ISO Planning Committee; has served as ISO representa-

tive to the United Nations; and served as ISO vice-president from 1958 until his resignation at the meeting of the ISO Council this year.

In 1949, Admiral Hussey represented the U.S. at the first ISO General Assembly, which was held in Paris, France. By 1950, there were 72 ISO projects under way, but the American Standards Association, the USA member, was participating actively in only 18 of them. Of these, ASA held the secretariat for 7. Today, as a result of Admiral Hussey's interest and continuous effort on behalf of the international work, and the increasing support of the groups concerned, the American Standards Association is participating in 50 ISO projects, holds the secretariat for 9, and is an observer on the remaining 42. During the past year, American industry has indicated its interest in the international work by sending 168 delegates to attend ISO and IEC meetings in India, Finland, Italy, France, England, Sweden, and Switzerland.

Convinced of the importance of international cooperation to American industry, Admiral Hussey encouraged member groups to make it possible for American industry to view the activities of the international organizations at close range.

As a result, the second ISO General Assembly was held in New York, June 9-26, 1952. This was a huge success, both in terms of technical work accomplished and in mutual enjoyment of the social activities provided by the U. S. hosts. Delegates from 33 countries attended the General Assembly and the meetings of 15 ISO technical committees.

Equally successful was the Golden Jubilee of the International Electrotechnical Commission held in Philadelphia, two years later, September 1-16, 1954. More than 800 delegates from 21 countries attended the meetings of 49 IEC technical committees and the Jubilee Day ceremonies held during this celebration of IEC's fiftieth anniversary. Dr Harold S. Osborne, former vice-president of ASA and former chairman of ASA's Standards Council, was IEC president.

Admiral Hussey has also taken a special interest in Pan American standards activities, and has encouraged ASA participation. During the past year, ASA's president, John R. Townsend, and Admiral Hussey visited Mexico, Chile, Argentina, Uruguay, and Brazil and took part in the meetings that reorganized the Pan American Standards Committee. The members of the American Standards Association are acting to support the new organization.

As for the Association itself, a number of innovations have been put into effect during Admiral Hussey's administration. To bring the story of standardization more forcefully to the attention of executives in industry as well as to the general public, a public relations department was organized in ASA, and for some years a public relations firm was hired to help tell the ASA's story. One result was publication of



Friendships with executives of overseas standards organizations have been a by-product of international activity. Dr Lal Verma, director, Indian Standards Institution, with Admiral Hussey at the ISO General Assembly in New York.



The U.S. tool industry served as host at meetings of ISO/TC 29, Small Tools, and ISO/TC 39, Machine Tools, in New York, September 19-30, 1960. At the ISO/TC 29 luncheon, left to right: A. Pallez, France, TC 29 secretary; Admiral Hussey; M. Meriel-Bussy, France, TC 29 chairman; H. L. McGregor, Jr., chairman of the Board, Metal Cutting Tool Institute; P. L. Houser, president of the Institute.

that classic of standardization, "The Strange Case of the Seven-Sided Post Hole." Another was the development of the national conferences on standards.

THE FIRST NATIONAL CONFERENCE ON STANDARDS, held in conjunction with the thirty-second ASA annual meeting, was in November 1950. It featured the first presentation of the Howard Coonley Medal, which is now held by such eminent standardization personalities as the Honorable Herbert Hoover, Senator Ralph E. Flanders, William L. Batt, and Howard Coonley himself.

The following year the Standards Medal was presented for the first time.

The Howard Coonley Medal recognizes service for standards on the executive level; the Standards Medal honors service on the working level.

One of the important "firsts" during Admiral Hussey's administration was the effort to carry the message of standardization to the West Coast by holding the National Conference on Standards in San Francisco. This was done in 1957. This year, 1961, the Conference was taken to Houston, Texas, in an attempt to reach the Southwest section of the country.

During the past year, the Board of Directors acted to recognize the special interest of company members in the Association's policy-making activities. As a result, the Constitution and By-laws have been changed to give company members, and associate members, representation on ASA's Board of Directors. The Company Member Conference, which is now a strong and active organization, has been charged with the responsibility for nominating the company representatives on the Board.

Interest in standards has increased many-fold during the past 14 years. One indication is the fact that sales of American Standards by ASA have quadrupled since January 1948. Admiral Hussey has always strongly encouraged the publication and sale of standards. The publishing activities of the Association have increased not only in quantity but also in amount of financial return.

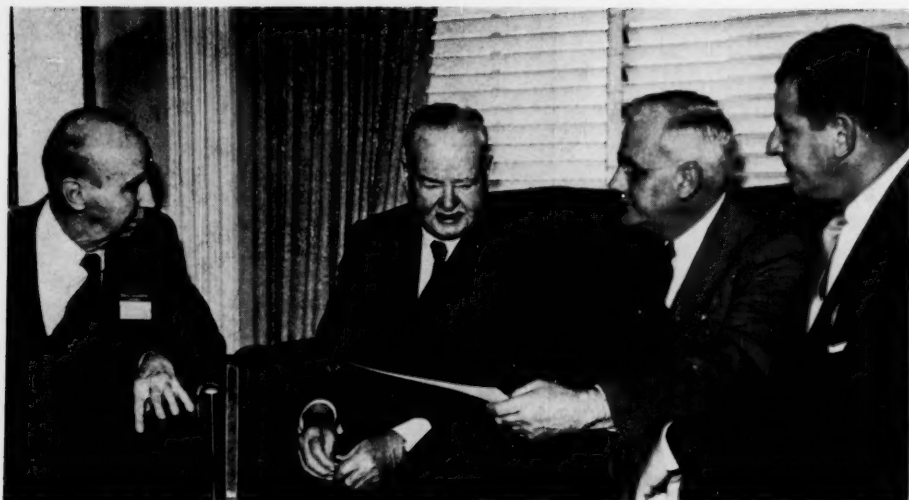
Among the changes that have occurred in the general standards scene may be noted the fact that 1948

was the year that the Standards Engineers Society held its first meeting in New York. Starting with 40 members, the Society now numbers some 1,200, with 17 chapters not only in this country but in Canada as well. Admiral Hussey has maintained cordial relations with the Society, believing it important that those concerned with standards present a united front. He was made a Fellow of the Society in 1954, and was cited for encouraging cooperation between industry and government in development of standards for greater efficiency in production. "Under his leadership, more active participation of companies, associations, and technical societies in voluntary standardization, both national and international, has been encouraged and advanced," the citation said in part. "His integrity and the esteem in which he is held by all who know him have brought him honor."

In addition to his service to ASA, Admiral Hussey has continued his interest in military ordnance during the past 14 years. In 1958 he was awarded the American Ordnance Association's Blandy Medal for his services in this field. He had served as president of the New York Post of the Association after the war, and as president of the national organization in 1955-56.

This year Admiral Hussey was one of the first group of executives to be designated Chartered Association Executive by the American Society of Association Executives.

Concerning ASA, Admiral Hussey himself says, "There is nothing wrong with the American Standards Association that some additional money would not put right." These were practically the words — and certainly the idea — of Frederick R. Lack, president of ASA, in his report presented at the annual meeting in 1948. Mr. Lack said: "Admiral Hussey's enthusiasm for the cause and his vigorous attack on the difficult problems that have beset the Association this last year have evoked the wonder and delight of all of those who have worked with him. It puts it squarely up to the rest of us to show a little of the same enthusiasm and find means of providing the necessary support so that Admiral Hussey and the staff can move forward."



The year The Honorable Herbert Hoover received the Howard Coonley Medal and Dr P. G. Agnew the Standards Medal; Thomas D. Jolly was ASA president and Roger Gay was president-elect. Left to right: Dr Agnew, Mr Hoover, Mr Jolly, Mr Gay.

Founders Day, October 19, 1953, celebrated ASA's thirty-fifth anniversary. Representatives of the five Founder Societies were present. Here, Mr Gay is seated with Professor Comfort Adams, first chairman of AESC, representative of the American Institute of Electrical Engineers. Standing are representatives of the American Society for Testing Materials; American Society of Mechanical Engineers; American Society of Civil Engineers; and American Institute of Mining and Metallurgical Engineers.

BELOW: As president, Mr Gay presented the Howard Coonley Medal to Senator Ralph E. Flanders in 1953.



ROGER GAY KNOWS STANDARDS

New Managing Director takes office January 1, 1962

ROGER GAY, who succeeds Vice Admiral G. F. Hussey, Jr, USN (Ret) as managing director of the American Standards Association January 1, 1962, had some interesting experiences with standards during the three years he was president of the Association (1952-1954), and later as Director, Cataloging, Standardization, and Inspection, Department of Defense.

Mr Gay took office as ASA president after having served as a member of the Board of Directors for six years. It was during his term as president that the International Organization for Standardization held its General Assembly in New York City (1952), and the International Electrotechnical Commission cele-



brated its Fiftieth Anniversary in Philadelphia (1954). On both occasions the American Standards Association was host.

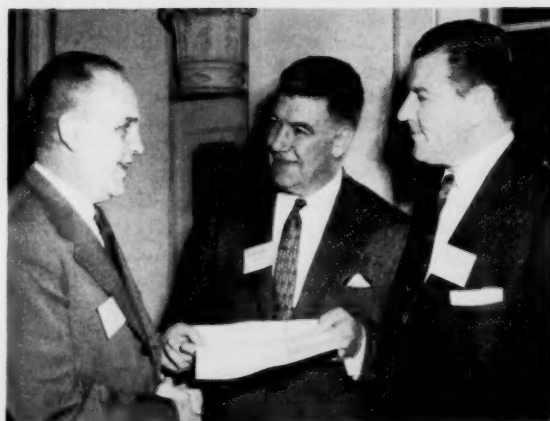
Later, when he went to Washington to work with the Department of Defense, he and his aides presented one of the sessions at the Sixth National Conference on Standards held in Washington. Theme of this Conference was Government-Industry Cooperation in Standardization. While with the Defense Department, Mr Gay administered the standardization program which did so much to reduce the number and variety of items in the supply system. Under his responsibility, a single identification and cataloging system was established for use by the armed forces. More than three million items were assigned a number in the Federal catalog system.

Mr Gay, as ASA president, presented the Howard Coonley Medal to a number of eminent executives. He himself received the Medal in 1957, the citation referring specifically to his services with the Federal Government, and his spearheading of the "efforts of the Federal Government to develop more effective standardization practices and to coordinate government standards with those of industry."

His "outstanding service in the interest of standardization" was also recognized when he received the annual joint award of the Standards Engineers Society and the American Society for Testing and Materials. Mr Gay was elected a Fellow of the Standards Engineers Society in 1955.

Before his Government service, Mr Gay was president and subsequently chairman of the Board of The Bristol Brass Corporation.

Some of the highlights of Mr Gay's experience with standards and the ASA are indicated in the pictures on these pages.



TOP: Mr Gay greets delegates from overseas at the General Assembly of the International Organization for Standardization in New York.

CENTER: The first Federal Standard to be approved by ASA as American Standard was presented to Willis MacLeod, General Services Administration, with Mr Gay, Department of Defense, looking on. H. Thomas Hallowell, Jr., ASA's president at the time, presented the standard.

RIGHT: With members of his staff, Mr Gay presented the Department of Defense story of government-industry cooperation on standardization during the National Conference on Standards in Washington, 1955.



The Twelfth National Conference on Standards



ABOVE: Robert Arrington and Needham P. Cain, both with Southern Pacific Lines, manned the Information Table.



Employees of Houston companies and the Chamber of Commerce helped with Registration.



The Rice Hotel, where Conference was held, welcomes American Standards Association delegates.

One of the best handled conferences ever held under the auspices of the American Standards Association, and some of the most interesting papers ever presented—this was the verdict following the three-day National Conference on Standards held at the Rice Hotel, Houston, Texas, early in October. The National Conference Program Committee, with H. C. Ball as chairman, and the Local Arrangements Committee at Houston, were given high praise for their work.

For a report of the Conference, see the following pages.

Captain Edwin H. Schantz (at rostrum) was principal speaker at the Awards Luncheon. At table, left to right: H. C. Ball; Clifford R. Gillam; Louis Palk; Captain Schantz; Harry B. Davis; Frank H. Roby; Harold Massey; J. W. McNair; Cyril Ainsworth. Admiral Hussey and Mr Townsend are out of the picture.

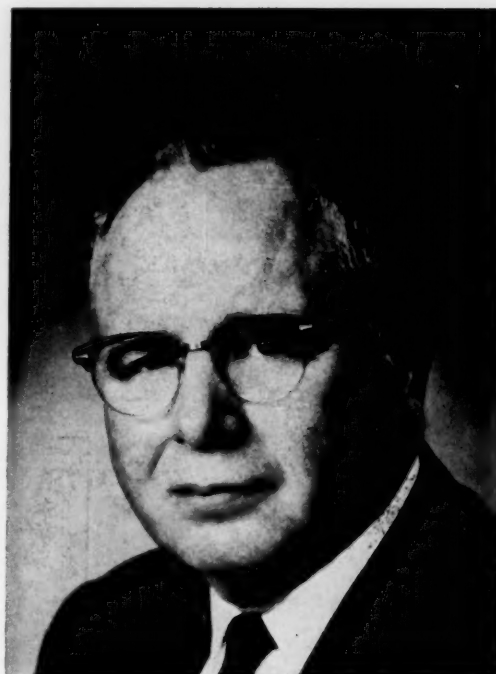


The 1961 Medal Awards

The Standards Medal

The Standards Medal recognizes long, devoted, and effective service to standardization and is given "In recognition of outstanding contributions to the philosophy of the American Standards Association and its application to voluntary standardization at the national level . . ." Previous awards have been made to: Paul C. Agnew, 1951; Frank O. Hoagland, 1952; Perry L. Houser, 1953; John Gaillard, 1954; James C. Morrow, M.B.E., 1955; Charles Rufus Harte, 1956; John R. Townsend, 1957; William P. Kliment, 1958; William L. Barth, 1959; Richard Charles Sogge, 1960.

Citation: A pioneer largely responsible for tremendous standards progress in the photographic field, he has been a constant source of inspiration to all engaged in standardization work. Author, lecturer, and scientist, he has skillfully combined leadership, foresight, ingenuity, and proven ability to advance the use of standards in practically every phase of photography. Now assistant to the technical director of the Ansco Division of the General Aniline and Film Corporation, he has been active in standards work since May, 1933, when he assisted in the formation of a technical standards program within that firm. Since that time, he has advanced the standardization movement through participation in research and committee activities, as an organizer, leader, and worker. A member of the Standards Council of the American Standards Association since 1938, and chairman of the Photographic Standards Board since its inception in 1950, he has been associated with the supervision of the full range of photographic standardization conducted under ASA procedures. On the international level, he has served as chief United States delegate to, and as chairman of technical committees of, the International Organization for Standardization in the fields of photography and motion pictures. One of the most influential individuals in photographic standards activity today, he has substantially assisted the ASA in promoting the knowledge and understanding of standards and increasing the participation of American industry in this work. Throughout his 28-years' service to standardization, he has exercised a marked quality of leadership that is reflected in more than 300 American Standards for photography and motion pictures. Without his ingenuity and guidance, twentieth-century standards work in photography might never have recorded the progress acknowledged to date.

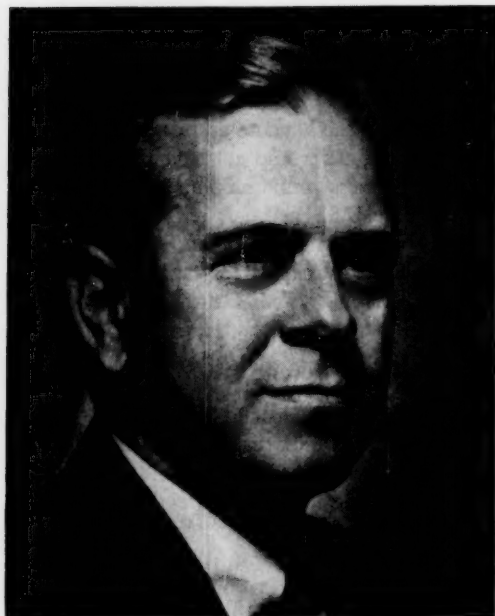


PAUL ARNOLD

Recipient of The Standards Medal

Recipient of The Howard Coonley Medal

LOUIS F. POLK



Citation: A crusading disciple of standardization for nearly three decades, his dedication to the voluntary standards movement has inspired many segments of industry to initiate, and assist in the development of, standards. A statesman of the standards movement on all levels of the economy, he has substantially aided the growth of national productivity through practical application of standards and subsequent promotion of their use. As chairman of the board of the Sheffield Corporation and group executive—vice-president and director of the Bendix Corporation, he has given steadfast support to standards development and promulgation. It was through his executive leadership and foresight that Sheffield instituted its Eli Whitney Metrology Laboratory in 1956, providing industry with equipment and manpower for certification of precision standards to light-wave accuracy. Active in American Standards Association standards work since 1941, he has, since 1945, been a United States correspondent on policy for the American-British-Canadian Engineering Unification Conference. In 1960 he served as a U.S. delegate to the 11th General Conference on Weights and Measures, which adopted a wavelength of light as a new standard of reference for linear measurement. As president of both the National Machine Tool Builders' Association and the American Ordnance Association, he promoted the development and use of standards through many lectures and articles. Acknowledged for his contributions to standardization in the fields of measurement, machining, automation, and numerical control, he has combined his scientific background with practical experience to promote the use of standards in many mass production facilities. His distinguished record of accomplishments is indicative of the service he has rendered since 1934 to the advancement of standardization and the understanding of its significant role in the American economy.

The Howard Coonley Medal recognizes "outstanding appreciation and support of voluntary standardization as a tool of management . . ." The medal has been awarded to: Howard Coonley, 1950; Herbert Hoover, 1951; William L. Batt, 1952; Ralph E. Flanders, 1953; Thomas D. Jolly, 1954; Harold S. Osborne, 1955; Frederick S. Blackall, Jr, 1956; Roger E. Gay, 1957; John R. Suman, 1958; Vincent de P. Goubeau, 1959; James Harold Foote, 1960.

The Howard Coonley Medal

THE HOWARD COONLEY MEDAL for 1961 was presented to Louis Polk, and the STANDARDS MEDAL for 1961 to Paul Arnold at the Awards Luncheon. Mr Polk is chairman of the board of the Sheffield Corporation. Mr Arnold is assistant to the technical director, Ansco Division, Aniline and Film Corporation. Because Mr Arnold was attending the 1961 meeting of ISO Technical Committee 42, Photography, and ISO/TC 36, Cinematography, at Garmisch-Partenkirchen, Germany, the medal was accepted on his behalf by Harry B. Davis, manager of professional sales, Ansco.

Principal speaker at the luncheon was Captain Edwin H. Schantz, USN, deputy assistant chief of the Bureau of Ships for Technical Logistics. Tracing the Navy's interest in standards back to 1868, when the Bureau of Steam Engineering issued a report on standards for bolts, nuts, and screws, Captain Schantz

told the Conference delegates that "Studies leading to the greater use of industry standards and specifications have top priority in the Bureau of Ships." Captain Schantz cited a number of cases where consultation on standards with the industry or technical groups concerned resulted in solution of standards problems satisfactory to both the Navy and the industry. The Bureau of Ships has issued a publication entitled "Aids for Engineer Specification Writers," for use in carrying on the necessary coordinate effort for standardization, he reported. This document poses two questions as a guide for the engineer who is responsible for preparing specifications: (1) What are the minimum service requirements? (2) What is feasible industrially? He also mentioned a number of examples of benefits experienced through the use of industry standards.



ASA President John R. Townsend opened the Twelfth National Conference at Houston. Left to right: John R. Suman; D. J. Hardenbrook; H. C. Ball; Mr Townsend; Honorable Albert Thomas.

Opening Session

JOHAN R. TOWNSEND, president of the American Standards Association, opened the Twelfth National Conference on Standards Tuesday morning, October 10, pointing out that in the United States there is a different approach to standardization from that in any other country. In the United States, standardization is voluntary and cooperative, with only one objective—to reach a consensus, he said. This is the basic philosophy of the American Standards Association—to leave to industry the initiative and responsibility for the standardization work.

The delegates were welcomed to Houston by the **Honorable Albert Thomas**, Congressman from the Eighth District, Texas. Mr Thomas was urgent in his plea to the people of the United States to realize that operations of the Federal Government represent the biggest business in the world. Men of sufficient ability and experience to run such a business are needed, he said, urging that "archaic policies" be changed and salaries of government employees be raised. Procurement should be taken out of the hands of the military and placed in the hands of businessmen, he believes, and he recommended that the military be left in charge of purely military matters but not of industrial matters for which military men are not trained.

John R. Suman, Howard Coonley Medalist of 1958, welcomed the Conference on behalf of Texas industry.

Estimates made in the American Petroleum Institute since 1951 indicate savings due to standardization to be within the range of 10 percent of the total amount of purchases, Mr Suman stated; and, he pointed out, the Chamber of Commerce of the United States and the Petroleum Equipment Suppliers Association estimate that the annual bill for oil field equipment and supplies is \$1½ billion.

D. J. Hardenbrook, national vice-president and president-elect of the National Association of Manu-

facturers, presented the keynote address. Commenting that American products would not have the reputation they now enjoy unless sound standards had been established to guide U.S. engineers and manufacturers, Mr Hardenbrook pointed out that "the emerging nations of the world, anxious for economic progress and modern technology, will fall far short of their goals unless they, too, adopt and adhere to the standards which have been found useful and essential among the more advanced nations." Leaving the discussion of technical standards to "more knowledgeable speakers," Mr Hardenbrook turned to standards meant "to guide us in the conduct of our political affairs so that the liberties our forefathers fought to establish would be preserved for future generations of Americans forever." Quoting George Washington's remark to the Constitutional Convention in Philadelphia in 1787, "Let us raise a standard to which the wise and honest can repair," Mr Hardenbrook said that the U. S. cannot keep the republic set up by the Constitution if it continues to drift away from the standards that the Constitution established for the relationships between the citizens and the government, and between the Federal Government and the several states.

"Is our beautiful dream of individual liberty under limited government destined to become but a brief interlude in the long history of tyranny?" he asked. And he answered his question, "Not if we adhere to



Congressman Thomas with H. C. Ball, chairman of the Conference Program Committee.

our standards! Not if we get back to standards we know were right in concept and which have served us so well in practice."

Reporting at the opening session, **Vice Admiral G. F. Hussey, Jr, USN (Ret)**, managing director of the American Standards Association, declared that there has been a growing recognition on the part of industry that international activity is valuable. In 1960, he said, ASA had issued 137 credentials to ISO delegates and observers; in 1961, 168 credentials had been issued. In addition, industry is now providing staff representation to meetings of technical committees for which the USA holds the secretariat. The success of the recently reorganized Pan American Standards Committee will depend on the strength of the Latin American standards bodies and on their ability to cooperate, he said. These standards bodies must look to a considerable extent to support from American industry operating in their countries.

Two years ago, Admiral Hussey said, the "Kelly report," had proposed formation of a committee to study standardization in the country as a whole. The present Secretary of Commerce has read the report, conferred with Dr Kelly, and is studying the



Under the leadership of Professor A. A. Rasmussen (center, above) the College of Engineering, University of Houston, permitted engineering students to help with the meetings. One team consisted of Clint Kubena (left) and Tony De La Reza (right).

situation. Admiral Hussey expressed the hope that the type of study recommended will be undertaken as a step in making standardization more effective to the country as a whole.



The Panel, Session 2, Part I, left to right: J. P. Mooney; J. G. Wilson (speaking); Dwight Hollingsworth; T. E. Velfort.

Session 2

Philosophy and Practice of Standardization Part I

Sponsor: ASA Company Member Conference.

Chairman: B. Scott Liston, chairman, ASA Company Member Conference; Standards Administrator, Diamond Alkali Company, Cleveland.

IN RECENT YEARS the Du Pont Company has built four plants in Texas and has injected nearly one-half billion dollars into the Texas economy through payroll and plant purchases, said **Dwight F. Hollingsworth**. Mr Hollingsworth is principal standards engineer, Design Division, E. I. du Pont de Nemours & Company, Wilmington, Delaware. "Engineering stand-

ards contributed to each technical step in the development of these manufacturing facilities and similar Du Pont plants in other communities," he said. The more than 70 Du Pont plants in 26 states are operated by 12 industrial departments, each responsible for a major product line. Du Pont's standards program was initiated in 1911 as a materials and methods program. Now Du Pont's engineering standards apply to plant buildings, equipment, and supplies, and they are used for the design, construction, maintenance, and procurement of these facilities.

A company-wide engineering standards program was organized in 1947. An engineering standards committee with representatives from all interested departments guides the program on policy matters, with an annual budget of \$400,000 to carry on the work. Savings reported by people who use standards



After the sessions, audience rushed to discuss ideas with speakers.

throughout the company indicate savings of over \$4.00, net, for every dollar invested in the program.

"TO A MAN trying to get a job done, a set of standards can be a great help; they can be no help at all; or they can be a hindrance," said **J. G. Wilson**, chief mechanical engineer, Shell Oil Company, New York. Mr Wilson pointed to the Boiler and Pressure Vessel Code as a standard which could be improved, and to the API Specification for Welded Oil Storage Tanks as a standard that he believes to be particularly good. Why should there be three American Standard piping codes, he asked—one for steam, one for chemical, and one for refinery piping. Is it really true that a piping system good for flammable hydrocarbon vapors at 750 F is not good for steam at the same temperature? He criticized the tendency on the part of engineers to reduce to handbook form a part or all of the work they may do or supervise.

As a basic approach to the problem of engineering standards, Mr Wilson proposed a three-point program, emphasizing recognition of engineering as a profession, and placing greater responsibility in the hands of qualified engineers.

Scott Liston, retiring chairman of the Company Member Conference, congratulates Phil Callan, Eastman Kodak Company, on his election as chairman. Bernard Bace, American Oil Company, left, was elected vice-chairman. New members of the Administrative Committee of CMC were elected at the meeting: Edward Clarke, Standard Pressed Steel Company; Gordon Coupe, Carrier Corporation; P. H. Goeltz, Gleason Works; Frank J. Heller, Phillips Petroleum Company.

FOUR COMMITTEES work under the Board on Codes and Standards of the American Society of Mechanical Engineers, **J. P. Mooney** explained. Mr Mooney, who is engineering specialist, Engineering Division, Design Department, Humble Oil and Refining Company, Baytown, Texas, spoke on behalf of the ASME. The four committees are the Safety Code Committee, the Standardization Committee, the Boiler and Pressure Vessel Code Committee, and the Power Test Code Committee. The activities under the Boiler and Pressure Vessel Code Committee and the Power Test Code Committee are solely Society activities, he pointed out. With six exceptions, the work under the Standardization Committee and the Safety Code Committee are ASA projects, sponsored and administered by the Society. The Society has official representation on approximately 60 outside standardization committees. These representatives report either to the Safety Code Committee or the Standardization Committee of ASME.

FOLLOWING THE CREATIVE aspects of standardization as represented by the work of individual companies, associations, and technical societies, comes the need for acceptance by all those concerned, declared **T. E. Veltfort**. Mr Veltfort, managing director of the Copper and Brass Research Association, is a past chairman of the American Standards Association's Standards Council.

Standards are a restraint — a voluntary one, it is true but nevertheless a restraint, Mr Veltfort said, and a restraint without representation is repugnant to freedom-loving people. This creates the need for the consensus principle. "It is vital to secure standards which are generally acceptable." It is the function of the American Standards Association to assure this important step in standardization. ASA performs functions which in many countries are reserved for the government, but which under our conceptions of freedom and voluntary action are more appropriately the responsibility of a private, duly qualified organization, such as ASA.





The Panel, Session 2, Part II, left to right: T. A. Marshall, Jr.; R. P. Trowbridge; P. J. Callan; Harold Massey; W. S. MacLeod.

Philosophy and Practices of Standardization Part II

Sponsor: ASA Company Member Conference.
Chairman: Philip J. Callan, director, Material Standards, Eastman Kodak Company, Rochester, New York.

PPOINTING OUT that Federal Government standardization is not a thing apart, but is closely interwoven with and interdependent on all other national standardization bodies, **Willis S. MacLeod** declared that the General Services Administration's close and effective coordination with national standardization groups has paid off in improved economy of government operations and in improved services and supplies. Mr MacLeod is director of the Standardization Division, Federal Supply Service, General Services Administration.

There are 4,100 Federal Specifications covering 800,000 individual items of supply used by the Government, he said. There are also 140 Federal Standards now in effect which limit procurement to standardized items and establish standard engineering practices and uniform test methods. He estimates that 6,000 Federal Specifications are needed to service properly the common supply area. The GSA target is 500. He mentioned many Federal Specifications in which nationally recognized industry standards are referenced, and pointed to the fact that GSA people are serving on many ASA sectional committees and boards, on ASTM committees and subcommittees, and on committees of the Society of Automotive Engineers and the National Paint, Varnish, and Lacquer Association. "As more American Standards are developed, extensive use will be made of them in the supply activities of the Federal Government," Mr MacLeod said.

THE SEVERAL HUNDRED delegates to the International Organization for Standardization meetings at Helsinki had characteristics similar to those of standards men everywhere, commented **Harold Massey**, managing

director of the Gas Appliance Manufacturers Association, and chairman of ASA's Standards Council. They have a sense of dedication to the concept of standardization; they have a no-nonsense attitude to the business at hand; and they harmonize conflicting viewpoints to achieve the most reasonable solution to the problem, he declared. He found that the other countries of the world are far from "dozing at the switch" in terms of their own technological advancement. The delegates at the ISO meeting represented their own national interests and presented their own national viewpoints. But by their presence they had already committed themselves to harmonizing these viewpoints in order to obtain international recommendations, he said. "The delegates from other countries are competent and very frequently are from a high level of industrial management," Mr Massey declared. "Considering the size, importance, and over-all significance of the American economy in the matter of world production and trade, the United States is rather poorly represented at some of these ISO meetings." He recalled a remark addressed to a U.S. group by H.A.R. Binney, managing director of the British Standards Institution: "I would ask of you to lead in international standards work now for, to be sure, if you do not, others will."

"THE WESTERN HEMISPHERE today faces a threat to its unity greater than any since the Monroe Doctrine was written 138 years ago," said **T. A. Marshall, Jr.** Mr Marshall is executive secretary of the American Society for Testing and Materials, and was one of the U.S. delegates at the meeting of the Pan American Standards Committee held at Montevideo, Uruguay, early this year. As a result of this meeting, work on technical standards is to be started promptly by committees composed of engineers and other technologists from the various countries, he reported.

"We in the United States must help in this effort to develop Pan American Standards," Mr Marshall declared. We can help, he said, by (1) actively supporting and participating in the standards activities of major American standardizing bodies, such as ASA and ASTM; (2) by actively supporting and partici-

pating in the work of standardizing bodies in Latin American countries through representatives of American industry in those countries; (3) by developing acceptable translations into Spanish and Portuguese of selected American and ASTM standards as a base for agreement on Pan American Standards. A delegation from ASTM has met with representatives of the National Bureau of Standards and discussed a proposal to translate ASTM standards for use in Latin America, Mr Marshall said. The Department of Commerce and the International Cooperation Administration (now the Agency for International Development) are studying the proposal. It would entail selected ASTM and American Standards, particularly in the work categories designated by the Pan American Standards Committee.

REFERRING to the American-British-Canadian Engineering Unification Conference as necessary "for the conduct of peaceful world trade," **Roy P. Trowbridge** called upon member nations to explore a wider range of topics that will provide for their common needs. Mr Trowbridge is director of the engineering standards section, General Motors Corporation, Warren, Michigan.

ABC work "has strengthened the standards of the various subjects covered within each country by virtue of exchanges between the best talent of the three countries," Mr Trowbridge declared, noting, however, that future work "will involve continuation of the discussions leading to better coordination of practices in the fields already developed, plus the introduction of new subjects for consideration by qualified

groups of ABC [American British-Canadian] representatives."

"Because standards are subject to constant change within the individual countries, as changes are made in the technologies of the countries, and also because there are many fine points left uncovered in any ABC agreement, it is essential that periodic ABC meetings be held to review past projects to determine their continued effectiveness and to continue to develop answers for the unresolved questions," Mr Trowbridge pointed out. "For example, in screw threads, although there has been agreement on the fundamental thread form, tolerances, allowances, and thread series, there still remains important work to be done in achieving ABC agreement on interpretation of limits; that is, gaging practice; and on the gages themselves, the disposition of gage tolerance relative to product tolerance, improvement of the tolerance formulation for long lengths of engagement; and development of agreements on nomenclature, designations, minor diameters of certain classes, and limitation of series. Accordingly, the screw thread correspondents in the three countries are maintaining a continuous exchange of ideas which will lead eventually to the desired agreements."

He recommended action on new areas of study suggested at the 1960 ABC steering committee meeting. These include decimalization of the inch, principles of gaging and metrology practice, material specifications, functional aspects of lubrication fittings, and terminology, symbolization, and drafting practice in electrical engineering work that merges with mechanical engineering.



The Panel, Session 3. William E. Brown; Frank W. Reinhart; John L. Dore; C. Howard Adams; George C. Anderson.

Session 3

Plastics Standards

Sponsor: Society of the Plastics Industry

Chairman: John L. Dore, president, Dore Plastics, Houston, Texas.

PLASTICS STANDARDS "will become even more important as products perform the challenging engineering roles in the economic tomorrow," declared **C. Howard Adams**, manager of product engineering, Plastics Division, Monsanto Chemical Company.

Tracing the development of plastics standards from the origin, in 1937, of committee D-20 of the American Society for Testing and Materials, Mr Adams said

the surface has only been scratched in this standards effort. While existing standards are "comprehensive and sophisticated" and "reflect a high degree of maturity," he believes the major challenge rests in the industry's ability to keep pace with technical developments.

"Plastics standardization, as practiced in the USA, is guided by democratic principles," Mr Adams declared. "Great pains are taken to ensure an equitable power balance among the concerned interests." He explained: "Standards so derived are (1) based on actual need; (2) are of the highest technical quality; and (3) represent a true consensus, national or otherwise. Since standardization is most important where materials and products are expected to be available for an extended period, the ability to produce standards at high speed is generally less important than the factors cited above. During the average standards drafting period, it is not uncommon that the method or material being standardized matures along with the standard itself. In the process of standardization, time plays an important part in improving the specification or test method."

The range of some 200 ASTM standards (40 of which are American Standards) indicates the creativity and resourcefulness of the more than 30 industrial and governmental groups now contributing to plastics standards development, Mr Adams pointed out. "Standardization has been a key factor" in the industry's growth, he said.

IN AN ANALYSIS of "Plastics Standards in Government," **Frank W. Reinhart**, chief of the plastics section of the National Bureau of Standards, cautioned that "the good plastics standard of today is likely to be mediocre or inadequate next year." He attributed this to "the advances in scientific concepts and materials" that necessitate the review of test methods periodically to determine their usefulness and validity.

"The improvements in manufacturing techniques, plastics processing techniques, test methods, applications, and materials are so rapid that specifications must be surveyed critically to bring them up to date," Mr Reinhart said.

"Sufficient knowledge is not always available to prepare a sound standard," he remarked. "Study and experimentation is needed to put basic scientific knowledge into use in standards."

A likely solution would be the formation of a central laboratory to "develop the plastics standards needed by government" and to conduct some of the research "needed to provide a basis for advances in plastics standards," Mr Reinhart believes.

IN A GRAPHIC PICTURE of "Greater Profits With International Plastics Standards," **William E. Brown** of the Dow Chemical Company, said the long-range objectives of international standards work will provide multiple benefits to American industry. Mr Brown is past chairman of the U. S. National Committee on



In his paper, Mr Adams pointed to slides showing the development of plastics standards. Left to right: George C. Anderson; Mr Adams; John L. Dore; Frank W. Reinhart; William E. Brown.

Technical Committee 61 (Plastics) of the International Organization for Standardization (ISO).

These benefits, Mr Brown said, include development of uniform national standards, provisions for a better competitive market, promotion of product uniformity, simplification of education and training, removal of uncertainty in comparing plastics products, providing a valuable channel of industrial communication, and stimulation of plastics creativity.

The U. S. National Committee for ISO/TC 61 operates as a special subcommittee of ASTM committee D-20 (Plastics) in an advisory capacity to ASA, Mr Brown explained. For ten years it has worked to obtain agreement with other ISO member nations on international plastics nomenclature and methods of test. Recently, however, Mr Brown commented, lack of support has threatened the retention of the secretariat of the ISO committee by the USA.

"It seems strange that the very industry which supported the concept of international plastics standards by a considerable majority of the then-existing participants would later so apathetically support this work that the U.S. would consider dropping its leadership of the technical committee on plastics," he said.

TWO GENERAL TYPES of standards are being developed by the Society of the Plastics Industry, **George C. Anderson** pointed out. The first applies to articles the ordinary consumer uses, and is intended to provide a measurable performance standard.

The second class provides standards where plastic products have encountered difficulties, either real or anticipated, because of code restrictions or lack of technical data. Here standards are needed to assure users of the reliability and quality of the product.

Mr Anderson is manager of product development in the National Tube Division of the U.S. Steel Corporation.

By introducing standard products, producers should find themselves in a more advantageous position with respect to competing nonplastic or even competing plastic materials, he said.



Vincent Grey, staff engineer of the American Standards Association, confers with Fred Muller and B. S. Sines before their discussion of new developments in materials handling, presented in Session 4.

Session 4

Optimum Distribution Through Standardization

Sponsor: The American Society of Mechanical Engineers. **Chairman:** B. S. Sines, executive vice-president, Southern Pacific Lines, Houston, Texas.

STANDARDS WORK will ultimately result in faster shipment of goods, coordinated transport facilities, and reductions in the \$100 billion annual cost to industry for distribution of products, said **Fred Muller, Jr.**, transportation specialist of Arthur D. Little Company.

In an analysis of the distribution picture, Mr Muller said gains registered in material handling reflect company management's interest in obtaining the most value from the transportation dollar. He attributed new technological advances to this industrial vigilance, among these advances being new automated order sorting and picking systems, and modular design of warehouses.

Concerning containerization, Mr Muller said, "Systems of containers employed in transport today are engaged in a type of captive service in which there is limited possibility for universal interchange and very little compatibility between the various types and physical sizes of the containers employed."

Mr Muller described the work of the MH5 sectional committee in developing freight container standards to coordinate transport of containers. Various task

forces are now at work on criteria for static and dynamic load conditions, securing and handling systems, details with regard to construction features related to the handling and securing systems, dimensions and tolerances, and nomenclature.

An American Standard approved this year specifies nominal lengths of van containers, Mr Muller pointed out. In the field of pallet containers, "which are designed to be used and loaded inside the vans," Mr Muller disclosed that five recommendations have been made by the committee, calling for maximum outside dimensions. "It is hoped that early action will be taken with regard to cargo and pallet size containers so as to make available to the shipping public the complete integrated series of containers" he said.

Since van containers are being transported on a door-to-door basis from inland cities in one country to inland cities in foreign countries, the international aspects of containerization "are being studied and watched closely" by standardization bodies throughout the world, Mr Muller commented. Technical committee 104 of the International Organization for Standardization is working toward global standards for freight containers and will meet next year in Europe to discuss various proposals.



Mr Muller explains additional points following the session.



The Panel, Session 5. Left to right: J. U. Parker; Harvey A. Wagner (speaking); Ralph E. Johnson; E. C. McFadden.

Session 5

Advantages of Safety Standards

Sponsor: Gulf Coast Chapter, American Society of Safety Engineers. **Chairman:** E. C. McFadden, vice-president, Texas Employers' Insurance Association, Dallas, Texas.

THERE IS LITTLE DOUBT that a high percentage of the serious and, accordingly, expensive accidents are caused by failure to abide by existing recommended standards," declared **Ralph E. Johnson, Jr.**, supervising engineer, Loss Prevention Division, Liberty Mutual Insurance Company. Asserting that this applies in public liability and product liability fields as well as in employee accidents and workmen's compensation cases, Mr Johnson pointed to the numerous \$50,000 to \$400,000 judgments rendered in favor of injured persons and against industrial concerns. "A major factor involved in many of these courtroom decisions is the assumption that the defendant company has been negligent in complying with recommended standards and codes," Mr John-

son pointed out. For example, falls on stairways are a major cost problem to many stores, he said. "Stairways with risers that are of uneven dimensions, or not within American Standard recommended heights, with treads that are too narrow, or with lighting below recommended standards, place the store in an unenviable position as a defendant. In nearly every case, the failure to meet the applicable American Standards is taken as evidence of negligence," Mr Johnson declared.

Mr Johnson suggested that several steps be taken to encourage compliance with safety standards: First, by becoming better acquainted with the standards; second, by recognizing the economic advantages and doing a better job of selling these standards to others; third, by adding a one- or two-page addendum to safety codes, containing short, factual descriptions of serious accidents caused by failure to comply with existing codes.

USING THE CASE of the fictitious Mr A. Hazard as an example, **J. U. Parker**, chief safety engineer, Humble Oil and Refining Company, Houston, illustrated the number of government departments involved when an industrial accident occurs. Mr Hazard is assumed to be a roustabout who works on a drilling platform located off the Coast of California near Long Beach. The company that owns the rig is assumed to have a government contract. Mr Hazard is assumed to have dropped a drum, which ruptured, and the vapors ignited. As a result, Mr Hazard was seriously burned. Mr Parker shows in his story that the city, the State of California, the Department of Labor, the Department of Interior, the U.S. Coast Guard, would all have some concern with this case. He urged that the most effective way to solve the accident problem is through education of workmen rather than through legislation.

DEVELOPMENT OF NUCLEAR standards by American industry and government in harnessing nuclear energy for peaceful use would help to put nuclear-fired power plants on a competitive capital cost basis with



The speakers' platform is popular following the sessions.

conventional power facilities. This was the forecast for nuclear energy expressed by **Harvey A. Wagner**, assistant vice-president of the Detroit Edison Company.

Application of nuclear and non-nuclear standards would permit reductions in capital cost expenditures for nuclear power plants, Mr Wagner asserted. "As the industry expands and develops, we must be ready to move in with standards wherever it is possible," he said.

A likely target for cost reductions is in purchasing activities, Mr Wagner declared.

Practical application of standards in the capital cost area where nuclear power plants exceed coal power plants by 30 percent, coupled with gains in fuel efficiency through standardization, would put nuclear-fired power plants on a competitive basis with coal facilities, Mr Wagner believes.

Mr Wagner emphasized that the objective in nuclear standards work is to go ahead, "but to do so safely with full recognition of public safety." Nuclear standards work being conducted by seven sectional committees of the American Standards Association, is considering such factors as location, containment, design, operating procedures, and technical qualifications of personnel, all of which are of primary importance to public safety.

To attain the objectives of a safe and economic nuclear plant, industry and government must share the responsibility for developing appropriate standards to define operation and assure reliability of equipment and materials to the maximum degree, Mr Wagner said. "In achieving this goal, safety standards . . . will go far to assure safe operation and, at the same time, to produce economic power," he concluded.



The Panel, Session 6, left to right: R. C. Fast; Boyd C. Jackson; Roy Stockton; C. W. Doyle.

Session 6

Putting Standards to Work

Sponsor: National Association of Purchasing Agents. **Chairman:** Roy Stockton, materials manager, Reed Roller Bit Company, Houston, Texas.

EMPHASIZING that "it is not a question of whether you can afford a standardization program, but whether you can afford to be without one," **Boyd C. Jackson** proposed a four-point plan for the formation of a company standards program to accomplish management's goals of increased profit. Mr Jackson is superintendent of stores, Purchasing and Stores Department, City Public Service Board, San Antonio, Texas; and is president of the Purchasing Agents Association of San Antonio. He noted that the standards program should have the support of management, should provide a voice for all company departments, be operated in conjunction with a value analysis program, and should be planned on a long-range rather than a temporary basis.

Recounting the procedure used in the standards program at the Public Service Board, a municipally

owned utility, Mr Jackson said it initially lacked the enthusiastic support of management, but that endorsement soon followed the gains made by the program.

Formation of a standards committee, with firm management approval, led to an overhauling of the stocking program, he said. "We found that we carried 15 different sizes of strain clamps and reduced the number to 4; we used 4 types of insulation on 600 volt wire and cut the figure to 2; we were using 11 sizes of window envelopes which we were able to reduce to 4." He indicated that about 90 percent of the specifications the Public Service Board writes for its own use utilize national and industry standards. "All real savings must be made through standardization on a national and industry basis," Mr. Jackson commented. "When you use American Standards you know that they are backed by a national consensus of all parties concerned."

DISCUSSING THE COMPANY application of "Value Analysis and Standardization," C. W. Doyle remarked that standardization is one of the most logical avenues of approach for providing value analysis and value engineering at the lowest possible cost. Mr Doyle is value control coordinator, Fort Worth Division, General Dynamics, Fort Worth, Texas.

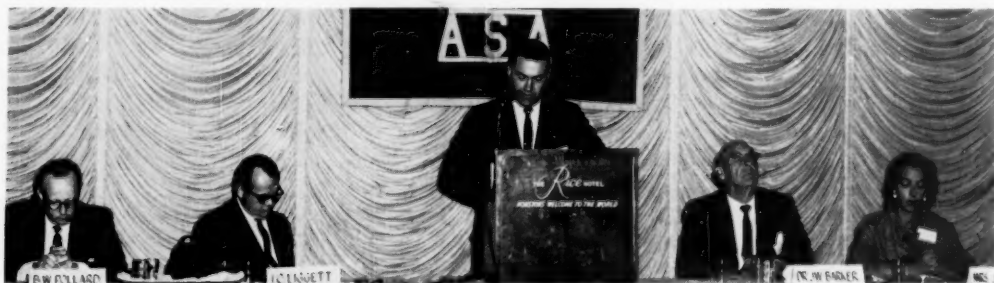
In an analysis of the profit picture, Mr Doyle said, "one of the most effective means of removing or reducing costs in our products and practices is a dynamic program mushrooming all over the United States called value analysis. It is a program of planned and proven techniques designed to lower the cost

of our product and enhance our profit picture by questioning and relating cost to the function to be performed by a product or service." Though value analysis attempts to offer a reliable product at the lowest possible cost, it is dependent on standardization and the application of standards to achieve this goal, he asserted.

Noting that the purchasing, manufacturing, and material control departments all benefit appreciably, Mr Doyle said, "It should appear logical that in searching for the lowest possible cost to achieve a desired function, one of the first areas to be considered is the possibility of standardization."

IN A SLIDE PRESENTATION, "Putting Standards to Work," R. C. Fast emphasized the application of standards in encouraging competition, reducing obsolescence, facilitating mass production with resultant lower prices, expediting delivery of goods, maintaining proper material control, and improving engineering and design of products. Mr Fast is division purchasing agent, Pan American Petroleum Corporation, Fort Worth, Texas. He is chairman of District No. 2, Value Analysis Standardization Committee, National Association of Purchasing Agents.

Among the areas specifically mentioned by Mr Fast as standardization possibilities were production parts and materials; construction materials and building supplies; packaging; maintenance materials, parts and equipment; office equipment and supplies and parts, facilities and equipment used in material handling.



The Panel, Session 7, left to right: B. W. Pollard; I. C. Liggett; R. E. Utman (speaking); Dr J. W. Barker; Mrs Jessica Melton.

Session 7

Data Processing Standards

Sponsor: Business Equipment Manufacturers Association. **Chairman:** I. C. Liggett, director, Systems Standards, International Business Machines Corporation, New York.

RECOGNIZING THE URGENT NEED for standards to ensure most effective use of the data processing equipments now being applied so widely by both industry and government, manufacturers and users are working together on national and international programs for development of the standards needed, said Dr J. W. Barker, acting director of the Data Processing Group, Business Equipment Manu-

facturers Association. Sectional Committee X3, Data Processing Machines, sponsored by the BEMA under the procedures of the American Standards Association, is working to develop a single standard for logical representation of characters and character format used for interchange of instruction, data, and control information between data processing equipments. This committee is also in charge of developing U. S. viewpoints for consideration by the international committees — ISO/TC 97, Computers and Information Processing, and IEC/TC 53, Electrical Characteristics of Computers.

Seven subcommittees of Sectional Committee X3 are now at work: (1) Character recognition; (2) Coded character sets and data formats; (3) Data communication; (4) Common problem-oriented programming languages; (5) Terminology and glossary; (6) Problem description and analysis; editing; (7) International. The groups working on these committees "represent a vast number of talented manhours expended," Mr Barker declared. He explained that the committee has attempted to standardize the logic behind these systems "before attempting to standardize any part that affects the hardware." "We do not wish to rush into premature hardware standardization that might freeze the hardware at unacceptably low performance levels," he explained.

REPORTING ON THE WORK of Subcommittee X3-1, Optical Character Recognition, **B. W. Pollard** declared that the primary objective of the subcommittee is to prepare a recommendation for a numeric font to be completed during the first quarter of 1962. Mr Pollard is director of engineering, Burroughs Corporation, Detroit, and chairman of X3-1. The requirements of many different groups are being kept in mind, including retail and wholesale industries, government, finance, transportation, utilities, manufacturing, insurance, petroleum, and communications, he said. Many of these are represented on the task groups.

THE WORK OF SUBCOMMITTEE X3-2, Character Codes and Input and Output Media, was reported by the committee's chairman, **Mr Liggett**, who served as chairman of this conference session. The Department of Defense expects to have almost 1000 computers in use by the end of the next fiscal year, he said, and quoted a Department spokesman to the effect that "Every computer installed shows an additional need for interchange of information at least with data producing and recording devices and often with other computers."

Data processing developed from punched-card equipment and most codes for computer-type equipment were established to facilitate translation from card code to computer code, Mr Liggett explained. Much existing equipment will never be changed, he believes, but expects most new data processing equipment to use a new code when it is developed, at least for information interchange purposes. The sub-

committee has already listed 19 design criteria for a standard code.

THE LANGUAGES USED by humans to communicate to computing or data processing machines are called "mechanical" languages, explained **R. E. Utman**, alternate chairman of Subcommittee X3-4. Mr Utman is manager of Univac Systems Standards, Remington Rand Univac Division, Sperry Rand Corporation. People who plan the computer solution to problems and then translate such plans into statements or "programs" in a machine language are known as "programmers." The language of the problem statement and the mechanical language into which it is translated are both called "programming languages."

Because of the problems and expense of programming, computer users have banded together in self-defense into "users groups," such as SHARE, GUIDE, USE, Mr Utman pointed out. They have found the answer to their problems in one form or another of standardization, he said. Recently, the community of users groups has organized to form a powerful and representative association called JUG (Joint Users Group).

A number of computer languages have been developed, including ALGOL (a universal algorithmic or algebric language) and COBOL, an English-like Common Business Oriented Language set up by the Conference on Data Systems Languages representing computer users and manufacturers with sponsorship from the Department of Defense. However, there has been difficulty in programming processors to translate these languages to the respective machines and in maintaining them properly. This is the reason for the work of X3-4, which is now reviewing these two languages as a basis for development of complete and unambiguous specifications. Completion of the work is scheduled for mid-1962. Once the standard language is completed, it will be necessary to specify tests to be used in checking the variety of interpretations that will be labelled and sold in the name of the standard language, Mr Utman declared. It will also be necessary to establish standard criteria and tests to qualify processors that may carry the name of the language, he said.

THE PROCEDURES for information retrieval involve, first acquisition of source documents; second, analysis of the source documents to infer the intentions of the author and to anticipate the interest of the potential readers of the documents; third, control of the terminology used; and fourth, recording the results of analysis on a searchable medium. This was the analysis presented in a paper prepared by **A. W. Kent**, deputy director, Information Retrieval Center, Western Reserve University, Cleveland, Ohio, and **Mrs Jessica Melton**, of the Center. Mrs Melton presented the paper. She warned against imposition of standardization by any authority.

Session 8

A Case History of Growth Through Standards

Sponsor: Mobile Homes Manufacturers Association

Chairman: F. A. McCallum, president, MHMA; vice-president, Detroit Mobile Homes, Inc.

INDUSTRY TORMENT preceding standards acceptance" was the title given his paper by **Edward L. Wilson**, managing director of the Mobile Homes Manufacturers Association. Mr Wilson was referring to the problems faced by many of the association's members when the association decided to make its standards a requirement for membership. Converting to a standard in the area of plumbing, heating, and electrical equipment and installation in many instances increased manufacturers' costs in almost direct proportion to the improvement in the quality of the product originally manufactured, Mr Wilson said. The association is now working with Sectional Committee A119 for approval of two MHMA standards as American Standard.

IN HIS OPINION, the mobile homes industry "would have faced virtual extinction if it had not developed a proper standards program," said **Earl W. Swett**, chairman of the Standards Committee of the Mobile Homes Manufacturers Association. Mr Swett is president of the Marlette Coach Company, Marlette, Michigan. "At one point, our industry was in serious trouble, and the manufacturers had to be shocked into the realization that only by building the products to acceptable standards could the industry hope to survive," he said. The program is now working and "we are now receiving wholehearted cooperation from the membership." The association is now carrying on a program of education to help manufacturers comply with the standards, Mr Swett pointed out. Field engineers visit the manufacturers regularly. Recently, by-laws were adopted unanimously by the members to speed expulsion of a member if he refuses to comply with the standards.

"STANDARDS IN ACTION" as applied to mobile homes or travel trailers must be related to standards for plumbing, heating, and electricity, commented **Louis J. Lucas**, director, Standards Division, Mobile Homes Manufacturers Association. The purpose of the standards for mobile homes is to secure consumer safety, health, and welfare, he declared. The philosophy behind these standards is: (a) To establish performance standards rather than specifications; (b) To establish standards based upon actual trailer use and occupancy; (c) To utilize to the fullest in standards formulation the best knowledge and experience available; (d) To emphasize safety and health over property protection.



The Panel, Session 8. F. A. McCallum (seated). Standing, left to right: Edward L. Wilson; Earl W. Swett; Louis J. Lucas; Jack Foster.

ADoption of standards gave the industry an impressive and sensible tool to answer the objections of officials and interests opposed to wheeled housing, **Jack Foster**, legislative director of MHMA, declared. These standards made it possible to show that mobile homes were safe and sanitary housing, built to accepted principles of engineering. "During the past year, when legislatures met in most states, industry officials were able through state associations, to pass the word to assemblymen that industry standards had been developed and were being studied by a sectional committee of the American Standards Association," Mr Foster pointed out. "Naturally, lawmakers are aware of the stature and authenticity of standards approved by ASA. Therefore, they showed an inclination to wait until later legislative sessions before considering this type of legislation. In New York State, where model codes on housing, including mobile homes and mobile-home parks have been drawn up, the fact that new mobile homes met rigid specifications in important areas of health and safety served to win the confidence and respect of the officials in charge, Mr Foster pointed out.

"STANDARDS DO PAY OFF," declared **F. A. McCallum**, MHMA president. Referring to standardization's effect on sales, Mr McCallum declared, "We have been passing through a period of change from the standpoint of both construction and marketing. Basically, the change in construction has been built around our standards program. . . . We have actually improved our position in the housing industry." He pointed out that during the last year the Building Officials Conference of America adopted the MHMA standards for mobile homes and travel trailers for inclusion in the BOCA code. The industry, Mr McCallum said, is achieving unity through standards, and more than one company within the industry has freely admitted that it would maintain the standards program, even if the MHMA were to drop it.

CROSS - INDEXING

Industry and Military Specifications and Standards

Reported by W. L. HEALY

Do you know of any case where an adequate, and comparable, industry standard or specification can be used for a military document? If so, you are invited to call it to the attention of W. L. Healy, staff engineer, American Standards Association. Mr. Healy is cross-indexing and analyzing comparable industry and military specifications for the Bureau of Ships under a contract with ASA.

It is the thought that the materials represented by the industry standard are the standard, and more readily procured, materials. It is hoped that these industry standards and specifications which have been listed along with their comparable military documents in THE MAGAZINE OF STANDARDS may be used for procurement. However, the use for procurement of any of the published industry standards or specifications, especially in the area of critical application, is a matter for decision by the cognizant engineering office.

Following are recent examples of work performed under the contract. For other examples, see THE MAGAZINE OF STANDARDS, each issue beginning February 1961.

QQ-C-591b

cross index ASTM B 97-55; ASTM B 98-58 (ASME Spec. No. SB 98); ASTM B 99-54

QQ-C-591b—COPPER-SILICON; ROD, WIRE, SHAPES, AND FLAT PRODUCTS (FLAT WIRE, STRIP, SHEET, BAR, AND PLATE)

Equivalent Areas: ASTM B 97-55 covering copper-silicon alloy plate, sheet, strip and rolled bar, Alloys A, B, and C, are equivalent to Federal Specification QQ-C-591b, Composition A, B, and C, respectively.

The chemical properties requirements for Alloys A and C are the same.

The chemical properties requirements for Alloy B are the same except as listed in divergent areas.

The physical properties requirements for Alloys A, B, and C, ASTM 97-55 and Fed. Spec QQ-C-591b, Compositions A, B, and C, are comparable but differ slightly. See Table 1, in divergent areas.

ASTM B 98-58 (ASME Spec No. SB 98), Alloys A, B, and C, are comparable to QQ-C-591b, Compositions A, B, and D. Both specifications provide that the rods, bars, and shapes should be manufactured by hot working or cold working or both, finished by such cold rolling or drawing as may be required, and straightened. Both specifications are comparable in regard to mechanical properties requirements for soft, 1/2 hard, and hard, tempers for Compositions A, B, and D, and their comparable Alloys ASTM B 98-58—A, B, and D. Composition B (rod only) is available in extra hard temper.

QQ-C-591b TABLE 1

TEMPERS	SPEC. NO.	COMPOSITIONS A, B, and C				
		Tensile Strength psi	(Min) Yield psi	Elongation in 2" min	Approximate Rockwell Hardness	
					F Scale	B Scale
0.040 mm annealed	ASTM B 97-55	55,000 to 64,000			76-93	
Soft	QQ-C-591b	50,000 (min)	15,000	35%		
1/2 Hard	ASTM B 97-55	71,000 to 81,000				79-91
1/2 Hard	QQ-C-591b	70,000 (min)	10,000	10%		
Hard	ASTM B 97-55	87,000 to 97,000				88-96
Hard	QQ-C-591b	80,000 (min)	60,000	5%		
Composition B						
0.040 mm annealed	ASTM B 97-55	40,000 to 50,000			50-75	
Soft	QQ-C-591b	40,000 (min)	12,000	30%		
1/2 Hard	ASTM B 97-55	47,000 to 57,000				64-73
1/2 Hard	QQ-C-591b	47,000 (min)	20,000	12%		
Hard	ASTM B 97-55	60,000 to 70,000				74-82
Hard	QQ-C-591b	60,000 (min)	35,000	8%		

The chemical properties requirements for both specifications are comparable in regard to these three alloys. There are some slight differences which are shown in Table 2, in divergent areas.

ASTM B 99-54 listing copper silicon alloy wire, Alloy B, is comparable to Fed. Spec QQ-C-591b, Composition B.

The chemical properties requirements are identical except as noted in the divergent areas.

The physical properties requirements differ slightly. See divergent areas, Table 3.

The tolerances for ASTM B 97-55, B 98-58, and B 99-54, are in agreement with those listed in Federal Standard No. 146.

Divergent Areas: ASTM B 97-55, Alloy B, the chemical properties requirements differ from Fed. Spec QQ-C-591b, Composition B, in that the Fed. Spec lists 1.5 percent max Zn and 0.6 percent max Ni, whereas the ASTM B 97-55 lists no requirements for either Zn or Ni.

The physical properties requirements are shown in Table 1.

ASTM B 98-58 (ASTM B 249-59T) lists rounded corners and round edges but does not specifically indicate the radii. QQ-C-591b specifies maximum permissible radii of square corners for bars as 1/32 radius for bars up to 1 in. thick and 1/16 radius for bars over 1 in. thick. Radii of rounded corners for bars up to 1 in. thick are specified as 1/16 and 1/8 for bars over 1 in. thick.

The chemical properties requirements are comparable except for some slight differences as shown in Table 2.

ASTM B 99-54, the chemical properties requirements are the same for both ASTM B 99-54, Alloy B, and QQ-C-591b, Composition B, except that the Federal Specification lists a maximum of 0.6 percent Ni while the ASTM B 99-54 lists no requirement for Ni.

The physical properties requirements are comparable but differ slightly as shown in Table 3.

Exclusions: ASTM B 98-58 does not include QQ-C-591b, Compositions C and E.

ASME Spec No. SB 98 does not cover hard and extra hard tempers.

ASTM B 99-54 does not include wire covered by Fed. Spec QQ-C-591b, Composition E. Temper 3/4 hard listed in the Fed. Spec QQ-C-591b is not included in ASTM B 99-54.

Other Requirements: The procurement document should specify the order-data and include sampling and inspection requirements as indicated in Fed. Spec QQ-C-591b. The Federal Specification describes a "lot" as 10,000 lb or fraction thereof, of material of same composition, form, size, and temper submitted for inspection.

All tests mechanical and chemical should be in accordance with Federal Test Method Fed. Std 151. The material furnished under ASTM B 97-55 should conform with the applicable requirements of general specification ASTM B 248.

The material furnished under ASTM B 98-58 should conform with the applicable requirements of general specification ASTM B 249.

The material furnished under ASTM B 99-54 should

QQ-C-591b TABLE 3

COMPOSITION B				
Temper	Specification	Tensile Strength psi	Yield Min psi	Elonga- tion in 2" (min)
Annealed	ASTM B 99-54	43,000-55,000		40%
Soft	QQ-C-591b	40,000 (min)	12,000	30%
1/8 Hard	ASTM B 99-54	50,000-65,000		20%
	QQ-C-591b	50,000-65,000	20,000	20%
1/4 Hard	ASTM B 99-54	60,000-75,000		15%
	QQ-C-591b	60,000-75,000	42,000	12%
1/2 Hard	ASTM B 99-54	75,000-90,000		10%
	QQ-C-591b	70,000-85,000	50,000	10%
3/4 Hard	ASTM B 99-54			
	QQ-C-591b	80,000-90,000	55,000	7%
Hard	ASTM B 99-54	90,000-110,000		8%
	QQ-C-591b	90,000-110,000	60,000	5%

conform with the applicable requirements of general specification ASTM B 250.

Preparation for delivery as specified in contract should be in accordance with Fed. Std 102 and MIL-P-3993.

In addition to any special markings required in contract, marking for shipment should be in accordance with MIL STD 129.

MIL-P-13949B-(NAVY)

cross index NEMA PUB. NO. LP 1-1959

Revised 9/10/61 Part 10

MIL-P-13949B(NAVY-PLASTIC SHEET, LAMINATED, COPPER CLAD (FOR PRINTED WIRING))

Equivalent Areas: Grades XXXP, G-10, G-11 and FR-4 having copper-foil bonded to one or both sides and intended primarily for use in printed wiring, are equivalent to MIL-P-13949B (NAVY) Types PP, GE, GB, and GF, respectively.

The requirements in regard to thickness and tolerance of copper-foil, nominal over-all thicknesses and tolerances, permissible warp and twist, and the properties requirements are comparable.

Divergent Areas: None

Exclusions: The following types listed in MIL-P-13949B (NAVY) are not included in NEMA Pub No. LP-1-1959 (Revised 9/10/61), Part 10:

Type GM—Glass-fabric base, melamine resin.

Type GS—Glass-fabric base, silicone resin.

Other Requirements: The procurement document should specify the ordering data and include requirements for packaging, sampling, and inspection as indicated in MIL-P-13949B (NAVY). Each full-size copper-clad laminate, as furnished, shall be internally marked with the manufacturer's name or trademark. Each 3-in. by 3-in. square of each sheet shall be so marked. In addition, each sheet as furnished, shall be marked in accordance with Standard MIL-STD-130, with the type designation and the manufacturer's code symbol.

QQ-C-591b TABLE 2

CHEMICAL PROPERTIES REQUIREMENTS							
	Cu (min)	Si	Mn (max)	Zn (max)	Fe (max)	Ni (max)	Pb
QQ-C-591b Comp A	94.8	2.8-3.8	1.5	1.5	1.6	0.6	0.05 (max)
ASTM B 98-58 Alloy A	94.8	2.8-3.8	1.5	—	1.6	—	0.05 (max)
QQ-C-591b Comp B	96.0	0.8-2.0	0.7	1.5	0.8	0.6	0.05 (max)
ASTM B 98-58 Alloy B	96.0	0.8-2.0	0.7	1.5	0.8	—	0.05 (max)
QQ-C-591b Comp D	94.0	2.8-3.5	1.5	—	0.25	—	0.2-0.8
ASTM B 98-58 Alloy D	94.0	2.8-3.5	1.5	—	0.25	—	0.2-0.8

* An alloy containing as high as 2.6 percent silicon is acceptable providing the sum of all elements other than copper, silicon, and iron does not exceed 0.3 percent.

AMERICAN STANDARDS

ACOUSTICS, VIBRATION, AND MECHANICAL SHOCK

Design, Construction, and Operation of Variable Duration, Medium-Impact Shock-Testing Machine for Lightweight Equipment, Specification for, S2.1-1961 \$1.00

Describes construction and use of a drop-table which may be used to test equipment up to 400 lb in weight so as to determine the capacity of equipment to withstand the rigors of military service and other conditions of rough handling.

Sponsors: Acoustical Society of America; American Society of Mechanical Engineers

BUILDING AND CONSTRUCTION

Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped, Specifications for, A117.1-1961

Applies to all buildings and facilities used by the public, and to temporary or emergency conditions, as well as permanent conditions. Does not apply to private residences.

Sponsors: National Society for Crippled Children and Adults; The President's Committee on Employment of the Physically Handicapped

CINEMATOGRAPHY

Screen Luminance for Indoor Theaters, PH22.124-1961 \$0.50

Specifies screen luminance (brightness) levels and criteria for evaluating the suitability of the projection screen.

Sponsor: Society of Motion Picture and Television Engineers

ELECTRIC AND ELECTRONIC

Monochrome Television Broadcast Receivers, Methods of Testing, C16.13-1961 (Revision of 48 IRE 22.51; C16.13-1949) \$1.00

Measurement of the performance characteristics of the picture and sound sections of television receivers.

Sponsor: Institute of Radio Engineers

MECHANICAL

Spindle Flanges for Precision Boring Machines, B5.39-1961 \$1.50

Provides for interchangeability of tool or workholders between machines of different makes, limited to classifica-

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tion, standard sizes, dimensions, and nomenclature.

Sponsors: American Society of Tool and Manufacturing Engineers; American Society of Mechanical Engineers; Metal Cutting Tool Institute; National Machine Tool Builders' Association; Society of Automotive Engineers

MISCELLANEOUS

Sieves for Testing Purposes, Specifications for, ASTM E 11-61; ASA Z23.1-1961 (Revision of ASTM E 11-58T; ASA Z23.1-1959) \$0.30

Requirements covering wire cloth sieves, round-hole screens (sieves) and square-hole perforated plate screens (sieves) for precision testing in the classification of materials according to size.

Sponsors: American Society for Testing and Materials; National Bureau of Standards

PHOTOGRAPHY

Industrial X-ray Sheet Film (Inch Sizes), Dimensions for, PH1.15-1961 (Revision of PH1.15-1953) \$0.40

Covers dimensions and squareness requirements for industrial x-ray sheet film.

Graphic Arts Sheet Film (Inch and Centimeter Sizes), Dimensions for, PH1.16-1961 (Revision of PH1.16-1953) \$0.40

Covers dimensions and squareness requirements for graphic arts sheet film.

16mm 100-Foot Film Spools for Record-

ing Instruments, Microfilm, and Still-Picture Cameras, Dimensions for, PH1.33-1961 (Revision of Z38.1.52-1951) \$0.40

Gives dimensions for 16mm 100-foot film spools for recording instruments, microfilm and still-picture cameras.

16mm 200-Foot Film Spools for Recording Instruments, Microfilm, and Still-Picture Cameras, Dimensions for, PH1.34-1961 (Revision of Z38.1.53-1951) \$0.40

Gives dimensions for 16mm 200-foot film spools for recording instruments, microfilm and still-picture cameras.

35mm 100-Foot Film Spools for Recording Instruments, Microfilm, and Still-Picture Cameras, Dimensions for, PH1.35-1961 (Revision of Z38.1.54-1951) \$0.50

Gives dimensions for 35mm 100-foot film spools for recording instruments, microfilm and still-picture cameras.

70mm 100-Foot Film Spools for Recording Instruments, Microfilm, and Still-Picture Cameras, Dimensions for, PH1.36-1961 (Revision of Z38.1.55-1951) \$0.40

Gives dimensions for 70mm 100-foot film spools for recording instruments, microfilm and still-picture cameras.

Sponsor: Photographic Standards Board

Micro-Opaques, Specifications for, PH5.5-1961 \$1.00

Dimensions for micro-opaques and the size and arrangement of the micro-images and the placement of the microscopic legend.

Sponsor: American Library Association

In Process . . .

BUILDING AND CONSTRUCTION

As of November 13, 1961

American Standard Reaffirmed

Specific Gravity of Hydraulic Cement, Method of Test, ASTM C 188-44; ASA A1.12-1948 (R1961)

Sponsor: American Society for Testing and Materials

CHEMICAL

In Board of Review

Common Name for the Pest Control Chemical 2-chloro-4-ethylamino-6-isopropylamino-s-triazine: atrazine, K62.26-

Common Name for the Pest Control Chemical 2-chloro-4,6-bis(diethylamino)-s-triazine: chlorazone, K62.27-

Sponsor: U.S. Department of Agriculture

In Standards Board

Common Name for the Pest Control Chemical N-(trichloromethylthio) phthalimide: folpet, K62.25-

Common Name for the Pest Control Chemical 4-chlorophenyl 2,4,5-trichlorophenyl sulfone: tetradifon, K62.31-

Sponsor: U.S. Department of Agriculture

CINEMATOGRAPHY

American Standards Approved

35mm Photographic Sound Motion-Picture Film Usage in Camera, PH22.2-1961 (Revision of PH22.2-1954)

16mm Multi-Azimuth Test Film, Magnetic Type, PH22.126-1961

Sponsor: Society of Motion Picture and Television Engineers

DRAWINGS, SYMBOLS AND ABBREVIATIONS

American Standard Reaffirmed

Letter Symbols for Chemical Engineering, Y10.12-1955 (R1961)

Sponsor: American Society of Mechanical Engineers

ELECTRIC AND ELECTRONIC

In Board of Review

Rolled Aluminum Rods (EC Grade) for Electrical Purposes, Specifications for, ASTM B 233-61; ASA C7.23- (Revision of ASTM B 233-60; ASA C7.23-1960)

Resistivity of Electrical Conductor Materials, Method of Test for, ASTM B 193-61; ASA C7.24- (Revision of ASTM B 193-60; ASA C7.24-1960)

Three-Quarter Hard Aluminum Wire for Electrical Purposes, Specifications for, ASTM B 262-61; ASA C7.35- (Revision of ASTM B 262-56; ASA C7.35-1956)

Standard Nominal Diameters and Cross-Sectional Areas of Awg Sizes of Solid Round Wires used as Electrical Conductors, Specifications for, ASTM B 258-61; ASA C7.36- (Revision of ASTM B 258-57; ASA C7.36-1958)

Half-Hard Aluminum Wire for Electrical Purposes, Specification for, ASTM B 323-61; ASA C7.42- (Revision of ASTM B 323-60; ASA C7.42-1960)

Electrical Conductivity by Use of Eddy Currents, Method of Test for, ASTM B 342-61T; ASA C7.44-

Sponsor: American Society for Testing and Materials

In Standards Board

Differential Gain and Differential Phase, Method of Measurement, (60 IRE 23.51) ASA C16.33-

Sponsor: Institute of Radio Engineers

Reaffirmation Being Considered

Bronze Trolley Wire, Specifications for, ASTM B 9-55; ASA C7.5-1956

Copper Trolley Wire, Specifications for, ASTM B 47-55; ASA C7.6-1956

Hard-Drawn Copper Alloy Wires for Electrical Conductors, Specifications for, ASTM B 105-55; ASA C7.10-1956

Figure-9 Deep-Section Grooved and Figure-8 Copper Trolley Wire for Industrial Haulage, Specifications for, ASTM B 116-55; ASA C7.11-1956

Hard-Drawn Copper Covered Steel Wire, Specifications for, ASTM B 227-57; ASA C7.17-1958

Concentric-Lay-Stranded Copper Covered Steel Conductors, Specifications for, ASTM B 228-56; ASA C7.18-1957

Concentric-Lay-Stranded Copper and Copper Covered Steel Composite Conductors, Specifications for, ASTM B 229-56; ASA C7.19-1957

Sponsor: American Society for Testing and Materials

GAS-BURNING APPLIANCES

American Standards Approved

Approval Requirements for:

Domestic Gas Ranges, Volume I, Free-Standing Units, Z21.1.1-1961 (Revision of Z21.1.1-1959 and Z21.1.1a-1960)

Domestic Gas Ranges, Volume II, Built-In Domestic Cooking Units, Z21.1.2-1961 (Revision of Z21.1.2-1959 and Z21.1.2a-1960)

Domestic Gas Clothes Dryers, Z21.5-1961 (Revision of Z21.5-1959 and Z21.5a-1960)

Central Heating Gas Appliances, Volume I, Steam and Hot Water Boilers, Z21.13.1-1961 (Revision of Z21.13.1-1958, Z21.13.1a-1959, and Z21.13.1b-1960)

Central Heating Gas Appliances, Volume II, Gravity and Forced Air Central Furnaces, Z21.13.2-1961 (Revision of Z21.13.2-1960)

Central Heating Gas Appliances, Volume III, Gravity and Fan-Type Floor Furnaces, Z21.13.3-1961 (Revision of Z21.13.3-1959, Z21.13.3a-1960, and Z21.13.3b-1960)

Central Heating Gas Appliances, Volume IV, Gravity and Fan-Type Vented Recessed Heaters, Z21.13.4-1961 (Revision of Z21.13.4-1958, Z21.13.4a-1959, and Z21.13.4b-1960)

Gas Unit Heaters, Z21.16-1961 (Revision of Z21.16-1960)

Refrigerators Using Gas Fuel, Z21.19-1961 (Revision of Z21.19-1960)

Gas Appliance Thermostats, Z21.23-1961 (Revision of Z21.23-1940)

Gas-Fired Duct Furnaces, Z21.34-1961 (Revision of Z21.34-1958, Z21.34a-1959, and Z21.34b-1960)

Gas-Fired Absorption Summer Air-Conditioning Appliances, Z21.40.1-1961 (Revision of Z21.40-1959 and Z21.40a-1960)

Gas Engine Powered Summer Air-Conditioning Appliances, Z21.40.2-1961

Addenda

Addenda Z21.3a-1961 to Approval Requirements for Hotel and Restaurant Gas Ranges and Unit Broilers, Z21.3-1960

Addenda Z21.6a-1961 to Approval Requirements for Domestic Gas-Fired Incinerators, Z21.6-1960

Addenda Z21.10.1a-1961 to Approval Requirements for Gas Water Heaters, Volume I, Z21.10.1-1960

Addenda Z21.10.2b-1961 to Approval Requirements for Gas Water Heaters, Volume II, Z21.10.2-1959 and Z21.10.2a-1960

Addenda Z21.10.3a-1961 to Approval Requirements for Gas Water Heaters, Volume III, Z21.10.3-1960

Addenda Z21.27b-1961 to Approval Requirements for Hotel and Restaurant Gas Deep-Fat Fryers, Z21.27-1959 and Z21.27a-1960

Addenda Z21.28a-1961 to Approval Requirements for Portable Gas Baking and Roasting Ovens, Z21.28-1960

Sponsor: American Gas Association

MECHANICAL

American Standard Approved

Slotted and Recessed Head Wood Screws, B18.6.1-1961 (Revision of B18.6.1-1956)

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

PETROLEUM PRODUCTS AND LUBRICANTS

In Board of Review

Distillation of Petroleum Products, Method of Test for, ASTM D 86-61; ASA Z11.10- (Revision of ASTM D 86-59; ASA Z11.10-1960)

Analysis of Lubricating Grease, Methods of, ASTM D 128-61; ASA Z11.16- (Revision of ASTM D 128-59; ASA Z11.16-1960)

Flash Point Tag Closed Tester, Method of Test for, ASTM D 56-61; ASA Z11.24- (Revision of ASTM D 56-56; ASA Z11.24-1956)

Conradson Carbon Residue of Petroleum Products, Method of Test for, ASTM D 189-61; ASA Z11.25- (Revision of ASTM D 189-58; ASA Z11.25-1958)

Distillation of Gas Oil and Similar Distillate Fuel Oils, Method of Test for, ASTM D 158-59; ASA Z11.26- (Revision of ASA Z11.26-1960)

Terms Relating to Petroleum, Definitions of, ASTM D 228-61; ASA Z11.28- (Revision of ASTM D 228-57; ASA Z11.28-1957)

Precipitation Number of Lubricating Oils, Method of Test for, ASTM D 91-61; ASA Z11.30- (Revision of ASTM D 91-52; ASA Z11.30-1952 R1960)

Existent Gum in Fuels by Jet Evaporation, Method of Test for, ASTM D 381-61T; ASA Z11.36- (Revision of ASTM D 381-58T; ASA Z11.36-1958)

Knock Characteristics of Motor Fuels Below 100 Octane Number by the Motor Method, Method of Test for, ASTM D 357-61; ASA Z11.37- (Revision of ASTM D 357-60; ASA Z11.37-1960, 2nd edition)

Unsulphonated Residue of Petroleum Plant Spray Oils, Method of Test for, ASTM D 483-61T; ASA Z11.41- (Revision of ASTM D 483-60T; ASA Z11.41-1960)

Lead Antiknock Compounds in Gasoline (Gravimetric Method), Method of Test for, ASTM D 526-61; ASA Z11.48- (Revision of ASTM D 526-56; ASA Z11.48-1953 R1956)

Knock Characteristics of Motor Fuels Below 100 Octane Number by the Research Method, Method of Test for, ASTM D 908-61; ASA Z11.69- (Revision of ASTM D 908-60; ASA Z11.69-1960, 2nd edition)

Alpha Acetylenes in Butadiene, Butadiene Concentrates, and Butane-Butylene Mixtures (Silver Nitrate Method), Method of Test for, ASTM D 1020-61; ASA Z11.74- (Revision of ASTM D 1020-59; ASA Z11.74-1960)

Lead Antiknock Compounds in Gasoline (Polarographic Method), Method of Test for, ASTM D 1269-61; ASA Z11.98- (Revision of ASTM D 1269-58; ASA Z11.98-1958)

Mercaptan Sulfur in Aviation Turbine Fuels (Ampero-Metric-Potentiometric Methods), Method of Test for, ASTM D 1323-61; ASA Z11.105- (Revision of ASTM D 1323-56; ASA Z11.105-1960)

Kinematic Viscosity, Method of Test for, ASTM D 445-61; ASA Z11.107- (Revision of ASTM D 445-60; ASA Z11.107-1960)

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Refractive Index and Refractive Dispersion of Hydrocarbon Liquids, Method for Measurement of, ASTM D 1218-61; ASA Z11.113-

Mercaptan Sulfur in Aviation Turbine Fuels (Color-Indicator Method), Method of Test for, ASTM D 1219-61; ASA Z11.114-

Water and Sediment in Fuel Oils by Centrifuge, Method of Test for, ASTM D 1796-60T; ASA Z11.115-

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Withdrawal Being Considered

Analysis of 60 Octane Number Iso-Octane Normal Heptane ASTM Knock Test Reference Fuel Blends by Infrared Spectrophotometry, Method of Test for, ASTM D 1095-54; ASA Z11.94-57

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SAFETY

American Standard Approved

Installation and Operation of Pulverized-Fuel Systems, Z12.1-1961 (Revision of Z12.1-1959)

Sponsor: National Fire Protection Association

Installation of Blower and Exhaust Systems for Dust, Stock and Vapor Removal or Conveying, Z33.1-1961 (Revision of Z33.1-1959)

Sponsor: National Fire Protection Association

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Ethylene Dichloride, Maximal Acceptable Concentration of, Z37.21-

Methyl Bromide, Maximal Acceptable Concentration of, Z37.24-

Sponsor: American Industrial Hygiene Association

TEXTILES

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L14.49- (Revision of ASTM D 377-52T; ASA L14.49-1953)

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Evaluation of the Wrinkle Recovery of Fabrics by Means of the Wrinkle Recovery Tester, Tentative Test Method for, AATCC 66-1959; ASTM D 1295-60T; ASA L14.110-

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Determination of Spinning Lubricant Scourability, Standard Test Method for, AATCC 77-1956; ASA L14.113-

Determining the Ash Content of Bleached Woven Cotton Cloth, Tentative Test Method for, AATCC 78-1954; ASA L14.114-

Determining the Absorbency of Bleached Woven Cotton Cloth, Tentative Test Method for, AATCC 79-1954; ASA L14.115-

Determining the pH of Water Extracted from Bleached Woven Cotton Cloth, Tentative Test Method for, AATCC 81-1954; ASA L14.116-

Determining the Apparent Fluidity of Dispersions of Cellulose Fibers from Bleached Cotton Cloth, Tentative Test Method for, AATCC 82-1954; Methods A & B of ASTM D 539-53; ASA L14.117-

Colorfastness to Alternate Light Exposure and Washing, Tentative Test, AATCC 83-1957; ASA L14.118-

Determination of the Electrical Resistivity of Yarns, Tentative Test Method for, AATCC 84-1960; ASA L14.119- Colorfastness to Drycleaning, Tentative Test Method for, AATCC 85-1960; ASA L14.120-

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Wash and Wear Fabrics—Appearance After Home Laundering, Tentative Test Method for, AATCC 88-1960; ASA L14.123-

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Relaxation and Felting Shrinkage of Woven or Knitted Wool Textiles, Tentative Test Method for, AATCC 99-1960; ASTM D 1284-59; ASA L14.130-

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Quantitative Analysis of Textiles, Tentative Methods for, AATCC 20A-1959; ASTM D 629-59T; ASA L14.132-

Woven Asbestos Cloth, Tentative Specifications and Methods of Test for, ASTM D 1571-58T; ASA L14.133- (This method replaces ASTM D 577-52, which had been approved as ASA L14.35-1953)

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Withdrawal Being Considered

Dimensional Changes in Wool Textiles: Accelerated Test, Tentative Test Method for, AATCC 41-1952; ASA L14.77-1956

Shrinkage of Wool Hose: Accelerated Test, Tentative Test Method for, AATCC 73-1953; ASA L14.88-1956

Relaxation and Felting Shrinkage of Wool Knit Fabrics: Accelerated Test, Tentative Test Method for, AATCC 74-1953; ASTM D 1284-53T; ASA L14.89-1956

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AMERICAN STANDARDS PROJECTS

Standards for Street and Highway Lighting, D12—

Sponsor: Illuminating Engineering Society

The D12 sectional committee will carry out its work under the following scope, approved early this year: "Recommended criteria of design for visibility and safety upon streets and highways. These criteria include quantity of illumination for various classifications of roadways having differing degrees of vehicle and pedestrian traffic; avoidance of glare; distribution patterns of luminaires; mounting and spacing design; and design for special locations."

Fluid Power Systems and Components—

Project requested by the National Fluid Power Association

A new project to be carried out under the sectional committee method has been recommended by a general conference, held September 28. A broad scope of work was also recommended by the conference, to cover: "Standards, specifications, nomenclature, dimensions, and method of rating and testing fluid power systems and components."

Among the subjects suggested as possibilities for standardization were uniform marking of cylinder lines, uniform identification of solenoids used to actuate control devices integrated with the system, rod sizes and bores for fluid power cylinders, identification of components, glossary of terms.

The action of the conference is being submitted to the Mechanical Standards Board with the recommendation that the National Fluid Power Association be invited to accept sponsorship for the project.

Office Machines, X4—

Sponsor: Business Equipment Manufacturers Association

The standards to be developed by Sectional Committee X4 will be "end-use" standards, explains Carl P. Ray, chairman of the committee. Mr Ray is vice-president-marketing, of the Royal McBee Corporation, New York, and is a director of the corporation.

The X4 committee plans to work

toward standard terminology and definitions, a standard set of characters and symbols, and standardization of other fundamental elements of interest to users and manufacturers, Mr Ray says.

The committee's objective also is to cooperate on an international basis in the development of standards for such office machines as typewriters, bookkeeping machines, and cash registers. The committee serves as the U.S. group working with ISO Technical Committee 95, Office Machines.

When Mr Ray joined the Royal



Carl P. Ray

McBee Corporation in 1959, he had already had 21 years of executive experience in the business machines industry. He is a director of a number of companies manufacturing business machines in the U.S. and Canada. Mr Ray is a trustee of Deerfield Academy, Deerfield, Massachusetts, and a member of the Dartmouth Alumni Council, The Newcomen Society of North America, and the International Executives Association, among others.

L.A. Bechtel, Jr, manager, Marketing Research & Planning Department, Electric Typewriter Division, International Business Machines Corporation, is vice-chairman of the committee. Mr Bechtel joined IBM in a sales capacity in 1946 at the Corporation's Detroit office. He subsequently



L. A. Bechtel, Jr

became electric typewriter sales manager in the IBM Cincinnati office, and later was appointed administrative assistant in the company's New York headquarters. Since that time he



James Vincent

has served as product planning manager for the Division and as assistant sales manager. He became manager of marketing research and planning early in 1961.

James Vincent, manager, Sales and Marketing Corporation, New York, is serving as secretary of the committee.

Library Work and Documentation, Z39—

Sponsor: Council of National Library Associations

Robert E. Kingery, chairman of the Z39 committee, reports that the National Science Foundation and the Council on Library Resources have granted a fund to help the committee carry out its responsibilities. As a result, the committee has employed Miss Marguerite von Geyr as administrative assistant.



Miss Marguerite von Geyr

The fund will also be used for duplication of subcommittee reports and other material needed in the committee's work and for traveling expenses.

Miss von Geyr is a graduate of the University of Leipzig, Germany, and holds a "State Certificate" for translators and interpreters. She has worked in publishing offices and as a translator in Germany and Ireland, and for the Pratt Institute Library School in Brooklyn. From 1955 until late this summer, she had been with the Crowell-Collier Publishing Company, first as executive secretary to the Director of Publications, and finally as assistant editor.

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